Creating and Using Normalized Difference Vegetation Index (NDVI) from Satellite Imagery
NASA ARSET Advanced Webinar

Date: Four 1-hour sessions held every Wednesday 12:00 – 1:00PM EST (-05:00 UTC) from February 10 – March 2, 2016

Course Description: In this advanced webinar, participants will learn how to acquire, use, and derive NDVI imagery from Landsat and MODIS. Weekly webinars will include lectures, hands-on demonstrations of exercises, and written instructions on how to conduct the exercises. The exercises will use QGIS, a cross-platform open source GIS application. Each session will guide participants through the exercises, however to achieve the course learning objectives, participants should expect to spend additional time outside the webinars. There will be homework to complete after each exercise, which is required to be eligible for a completion certificate.

Learning Objectives: Learn how to create NDVI imagery, time series, and anomaly maps using NASA data including:

- A basic understanding of NDVI
- Acquiring Landsat and MODIS imagery
- Creating NDVI images from Landsat
- Using MODIS NDVI images to derive time series and NDVI anomaly maps

Intended audience: Local, regional, state, federal, and international organizations interested in assessing vegetation condition using satellite imagery. Professional organizations in the public and private sectors engaged in environmental management and monitoring will be given preference over organizations focused primarily on research.

Pre-requisites:

- Complete the on-demand "Fundamentals of Remote Sensing" webinars, Sessions 1 and 2 (http://arset.gsfc.nasa.gov/webinars/fundamentals-remote-sensing) or equivalent experience.
- Download and install QGIS and all accompanying software (https://www.qgis.org/en/site/forusers/download.html). This advanced webinar will use QGIS software and although previous experience with this software is not required, some experience with geospatial software will be helpful. We recommend you open QGIS and ensure the software is working prior to starting the webinar.

Certificate: A certificate will be provided to participants who attend all four webinars AND complete all four homework assignments by the due date.

Session 1 (February 10): NDVI and QGIS

- Overview of NDVI
- Introduction to QGIS

Session 2 (February 17): Deriving NDVI from Landsat

- Acquiring Landsat images
- Deriving NDVI from Landsat using QGIS

Session 3 (February 24): MODIS NDVI Time Series

- Overview of MODIS NDVI
- Live Demo of MODIS/NDVI Time Series Database from the Global Agriculture Monitoring (GLAM) Project
- Acquiring MODIS NDVI images
- Creating a time series from MODIS NDVI

Session 4 (March 2): MODIS NDVI Anomalies

- Overview of MODIS NDVI anomaly mapping
- Live Demo of the GIMMS MODIS Global Agricultural Monitoring System
- Creating a MODIS NDVI anomaly map